

Notes on the Sipunculida of Laguna Beach

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The following notes and provisional diagnoses are based upon a collection of Sipunculids made by Prof. Hilton at Laguna Beach in 1917. Six species are represented.

SIPUNCULUS NUDUS LINN.

One specimen of this widespread species was taken on the sand flats at low tide in August, Balboa. As preserved it is 26 cms. long. Attachments of nephridia and retractor muscles normal. The usual 31-32 longitudinal muscle bands. The body appears to be pigmented to some extent, as has also been recorded for a specimen from the Malacca region described as dark brown (Selenka), and one from Key West (Gerould). The species is known from various parts of the Atlantic along both shores, from the Mediterranean, Adriatic and Red seas, Malacca, Bismarck Archipelago, Philippines and Japan.

PHYSOSOMA AGASSIZI (KEFERSTEIN)

In the collection are six specimens of this well-marked species taken at low tide on sand flats at Balboa and Laguna Beach. The species is otherwise known to occur along the California coast (e.g., at Monterey Bay, Mendocino, San Francisco, Crescent City) and northward (Vancouver Id.) as well as southward (Puntarena, Panama). It has also been taken at Loyalty Is., Ceylon, Laccadives and Maldives, and in the Atlantic on the coasts of the United States and Africa.

DENDROSTOMA ZOSTERICOLA SP. NOV.

This species belongs to the group with but two retractor muscles. These have their origins in the posterior third of the body (in the type about 10 mm. from caudal end) and are well developed throughout and free to near insertions. The nephridia open at the level of the anus and are elongate and free. Contractile tube with numerous caeca. Tentacles strongly dendritic or arborescent, the terminal branches numerous. Introvert wholly lacking hooks. Skin brown or in part grey, set off into numerous areas, these transversely elongate in middle region, in the posterior more rectangular and longitudinally elongate. Entire body and introvert, excepting a short area proximal of tentacles, bearing moderately numerous, small, dark and rounded elevations which do not rise into true papillae; usually one of these to each cuticular area; of uniform size and abundance throughout. Body typically narrowed at both ends, fusiform. 35 mm. long behind anus and about 15 mm. to distal end of introvert.

Taken in eel grass in September, 1917.

Type—M. C. Z. 2, 181

DENDROSTOMA MYTHICA SP. NOV.

The type of this species was found in eel grass. Zosteræ in the same original lot with the types of the preceding species. It is a smaller species of obviously different form. The body is widest at the posterior end, followed by a much longer, narrower,

subcylindrical portion extending to the still narrower introvert proper. The species is like *zostericola* in lacking hooks on the introvert, but differs obviously in the character and arrangement of the tubercles. These are similarly small over the general body but are more closely arranged over the middle region than over the broader posterior one, while particularly characteristic is a band of abruptly much larger tubercles about the base of the introvert, distad of which region they become again abruptly smaller. The color is brown. The two retractors are inserted at the anterior end of the broad posterior region and are fused anteriorly, their free portions short. Nephridia free.

Length of body behind anus, 12 mm.; in front of this to base of tentacles, near 8 mm.

Type—M. C. Z. 2, 184.

DENDROSTOMA PYROIDES SP. NOV.

Differing conspicuously from *zostericola* in form, being broadest at the posterior end and as a whole subpyriform instead of conspicuously fusiform. It is darker brown in color. A conspicuous external difference is in having the introvert, or proboscis, armed on its median portion with numerous, comparatively large, dark hooks, which are not definitely seriate. The cuticle in general is covered with numerous small, dark, rounded elevations which in surface view are circular to slightly elliptic in outline and are larger in size at the base of the proboscis and at the posterior end of the body than elsewhere. Tentacles arborescently branched, the terminal branches numerous, finger-like. The two retractors are stout bands taking their origin in the posterior third of the body. Contractile tube with fewer caeca. Nephridia free, opening a little farther forward than the anus.

Length from anus to caudal end, 17 mm.; from anus to base of tentacles, 8 mm.

Taken at low tide on Laguna Beach.

Type—M. C. Z. 2, 182.

PHASCOLOSOMA HESPERA SP. NOV.

Somewhat resembling *P. procerum* in form, but with the proboscis more abruptly set off from the body and on the average narrower and especially much longer relatively to the latter. In the type the body proper is 8.5 mm. long, while the proboscis is 52 mm. long, i. e., about six times longer than the body, while in one paratype it is as much as 7.5 times longer. The body of the type is 2.6 mm. thick and the proboscis half or less than half this thickness. Body proper pointed at both ends, broadly subfusiform. The skin at the caudal end of the body is rather thickly studded with papillae, which are disally flat and dark colored over a pale and often constricted base. The papillae rapidly become fewer and more widely scattered over the middle and anterior regions of the body and over the proboscis, and at the same time become decidedly smaller and are often borne singly on low, rounded elevations; on the proboscis the papillae are typically colorless. The two retractor muscles in the type have their origins in the anterior part of the body.

The type was secured in sand at Balboa, December 26, 1917. Paratypes from eel-grass on Laguna Beach, September, 1917.

Type—M. C. Z. 2, 185.